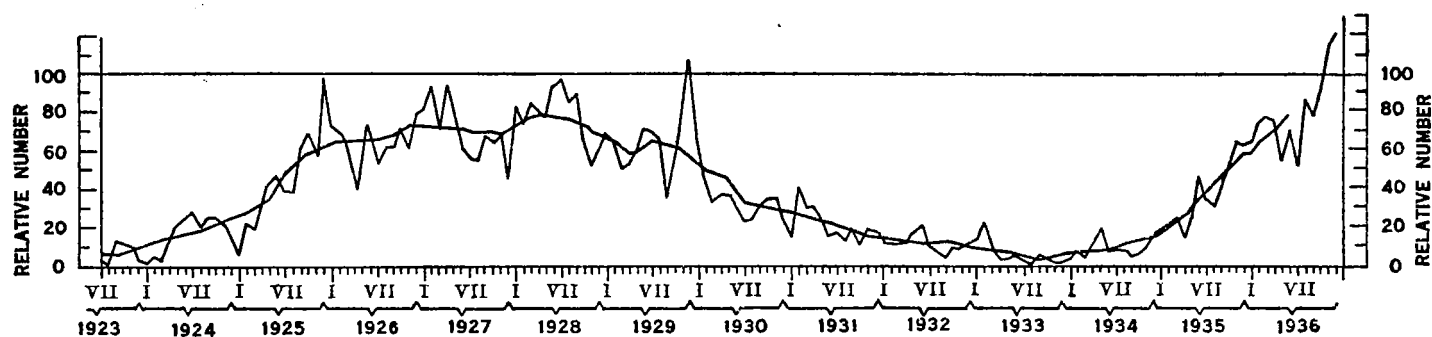


**Monthly Observed Sunspot Relative Numbers for the Period 1920-36, inclusive.** By CHARLES M. LENNAHAN. The definitive monthly sunspot relative numbers for the period 1749-1924, inclusive, have been published in *TERRESTRIAL MAGNETISM and ATMOSPHERIC ELECTRICITY*, 30: 83-86, June 1925. They are also available in the *MONTHLY WEATHER REVIEW*, 30: 171-176, April 1902 for 1749-1901, and 48: 459-461, August 1920, for 1901-1919, all dates inclusive.

The table published herewith is based on data taken from *Astronomische Mitteilungen*, Nrs. CXII-CXXXV, inclusive, and brings the data, as published in the *MONTHLY WEATHER REVIEW*, up to date.<sup>1</sup> The monthly relative numbers in the table do not agree exactly with the values published regularly in the *MONTHLY WEATHER REVIEW* inasmuch as the latter are provisional and are based only on observations made at Zurich and Arosa, whereas supplementary observations from other stations were used in computing the present values.



Observed and smoothed monthly relative numbers 1923-36.

The graph shows the curve corresponding to the observed values, together with the superimposed curve of the smoothed values. The smoothed values are obtained by first taking the mean of each set of 12 successive monthly numbers, and then the mean of each pair of successive monthly numbers, and then the mean of each pair of successive values so obtained; the result is taken to be the smoothed monthly sunspot relative number for the 7th month in the set of 12 corresponding to the first of the pair of values.

Monthly observed sunspot relative numbers

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1920.....	51.1	53.9	70.2	14.8	33.3	38.7	27.5	19.2	36.3	49.6	27.2	29.9	37.6
1921.....	31.5	28.3	23.7	32.4	22.2	33.7	41.9	12.8	17.8	18.2	17.8	20.3	26.1
1922.....	11.8	26.4	54.7	11.0	8.0	5.8	10.9	6.5	4.7	6.2	7.4	17.5	14.2
1923.....	4.5	1.5	3.3	6.1	3.2	9.1	3.5	0.5	13.2	11.6	10.0	2.8	5.8
1924.....	0.5	5.1	1.8	11.3	20.8	24.0	28.1	19.3	25.1	25.6	22.5	16.5	16.7
1925.....	5.5	23.2	18.0	31.7	42.8	47.5	38.5	37.9	60.2	69.2	58.6	98.6	44.3
1926.....	71.8	70.0	62.5	38.5	64.3	73.5	52.3	61.6	60.8	71.5	60.5	79.4	63.9
1927.....	51.6	93.0	69.6	93.5	70.1	59.1	54.9	53.8	68.4	63.1	67.2	45.2	69.0
1928.....	83.5	73.5	85.4	80.6	76.9	91.4	98.0	83.8	89.7	61.4	50.3	50.0	77.8
1929.....	68.9	64.1	50.2	52.8	58.2	71.9	70.2	65.8	34.4	54.0	81.1	108.0	65.0
1930.....	65.3	49.2	35.0	38.2	36.8	28.8	21.9	24.9	32.1	34.4	35.6	25.8	35.7
1931.....	14.6	43.1	30.0	31.2	24.6	15.3	17.4	13.0	19.0	10.0	18.7	17.8	21.2
1932.....	12.1	10.6	11.2	11.2	17.9	22.2	9.6	6.8	4.0	8.9	8.2	11.0	11.1
1933.....	12.3	22.2	10.1	2.9	3.2	5.2	2.8	0.2	5.1	3.0	0.6	0.3	5.7
1934.....	3.4	7.8	4.3	11.3	19.3	6.7	9.3	8.3	4.0	5.7	8.7	15.4	8.7
1935.....	18.9	20.5	23.1	12.2	27.3	45.7	33.9	30.1	42.1	53.2	64.2	61.5	36.1
1936.....	62.8	74.3	77.1	74.9	54.6	70.0	52.3	87.0	76.0	89.0	115.4	123.4	80.4

HORACE R. BYERS. *Synoptic and Aeronautical Meteorology*. New York, McGraw-Hill Book Co., 1937.

The primary purpose of this book is to provide a text on air-mass analysis and its practical applications in

<sup>1</sup> The numbers published in the *MONTHLY WEATHER REVIEW* 53: 77, February 1925 are not definitive values.

synoptic meteorology, with especial reference to aeronautical meteorology. A knowledge of elementary general meteorology is presupposed; but discussions are included of topics in physical and dynamical meteorology that are essential to a proper background for practical work in air-mass analysis.

The first two chapters discuss briefly the distribution of temperature in the earth's atmosphere—especially the vertical distribution—and its dependence on solar and terrestrial radiation; vertical stability and instability in the atmosphere; vertical motions and the phenomena of condensation and precipitation which accompany them; and the theory and use of various thermodynamic diagrams. The third chapter is devoted to a general discussion of the nature and characteristics of air masses, and is followed by chapters on the general circulation and on cyclones and anticyclones from the viewpoint of air-mass analysis. After a chapter on the changes which occur in air masses as a result of lifting, Willett's system of classi-

fication of the air masses of North America is presented. The practical analysis of synoptic maps is next discussed, with several illustrative examples; and is followed by a chapter on weather forecasting, which includes an account of Petterssen's kinematical methods. Succeeding chapters cover the subjects of condensation and precipitation; fog; and the thunderstorm, tornado, and waterspout. Discussions of the formation of ice on aircraft, atmospheric turbulence and its effects, recent summaries of upper air wind data for the United States, and duststorms complete the book.—Edgar W. Woolard.

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By AMY D. PUTNAM

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